



Figure 3. Raw wastewater boxplots (a) chromium (b) nickel (c) manganese.

2.2. Correlation among Parameters in the Raw Wastewater

Also, correlation matrices were developed to investigate the strength of relationships among the investigated water quality parameters in raw wastewater. From Table 1, a very strong correlation can be observed among turbidity, color, TSS, COD, and BOD with a correlation index ranging from 0.75 to 0.99. The highest correlation can be observed between color and turbidity with a correlation index of 0.99. The high correlation between color and turbidity can be linked to the fact that the more intensive the color is, the more light is absorbed and the turbidity appears to be higher than it is. This answers the question of why the real turbidity in a water sample is measured as scattered light. In that matter, relative to the general light reduction say to 0 Pt-Co by intensive colors dissolved in water, the final turbidity based on scattered light can then be exactly determined. Generally, the BOD to COD ratio serves as an indicator of the proportion of the organic matter that can be biologically degraded to total organic matter present in water. Therefore, the concentration levels or measures of COD concentration in water can be highly affected by the BOD concentration, a phenomenon that answers the high correlation between COD and BOD.

Table 1. Correlation of turbidity, color, TSS, COD, and BOD in the raw wastewater.

	Turbidity	Color	TSS	COD	BOD
Turbidity	1				
Color	0.99	1			
TSS	0.87	0.88	1		
COD	0.77	0.75	0.88	1	
BOD	0.80	0.85	0.80	0.81	1

2.3. Analysis of the Treated Effluent

2.3.1. Titanium (Anode) to Aluminium (Cathode) Electrode Arrangement (Ti-Al)

Table 2, shows that minimum and maximum concentrations of 0 FAU and 1.5 FAU were recorded from turbidity, respectively when the wastewater was subjected to the titanium (anode) to aluminium (cathode) electrode arrangement (Ti-Al). While 0.283 FAU was recorded as an average concentration. The turbidity average concentration is below the 5 FAU limit set by WHO for drinking water quality. Also, 0 Pt-Co and 0 mg/L were recorded as minimum concentration values for color and TSS, respectively. While, 59 Pt-Co and 5 mg/L were recorded as maximum concentration values for color and TSS, respectively. The average color concentration (29 Pt-Co) is beyond the recommended limit set for drinking water quality. However, the average TSS concentration is below the recommended limit.